

REMARKS

Claims 1-12 were pending in the present application. Claims 1 and 5 have been amended to add "over a spectral range from approximately ultraviolet to approximately infrared," as in previously presented claim 10, and claims 10 and 11 have been canceled. No claims have been added. Therefore, claims 1-9 and 12 are now pending in the present application.

Claim Rejections

Claims 1, 5, and 10-12 are rejected under 35 U.S.C. §102(b) as being anticipated by Zapien et al. (of record, hereinafter "Zapien"). Claims 2-4 and 6-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zapien in view of Hecht (of record, hereinafter "Hecht"). Claims 10 and 11 have been canceled, thus mooting their rejections. Applicants respectfully traverse the rejections to the pending claims for at least the following reasons.

Claims 1 and 5 recite that the illuminating optical system is color-corrected over a spectral range from approximately ultraviolet to approximately infrared. As understood by one of ordinary skill in the art, this feature requires that the optical path difference (OPD) due to the illuminating optical system is very small for wavelengths in the spectral range from approximately ultraviolet to approximately infrared. Zapien does not teach, disclose, or suggest this feature.

First, Zapien discloses only a "UV achromatic objective." One of ordinary skill in the art will recognize that an "achromatic" objective is corrected to bring two specified wavelengths, such as the blue line of hydrogen at 486.1 nm and the red line of hydrogen at 656.3 nm, to a common focal point. A definition of "achromat," taken from a web-based dictionary search, is attached, as well as an excerpt regarding chromatic aberration and achromats from *Optics* by Klein and Furtak (Wiley, New York, 1986). However, achromats are not color corrected at wavelengths other than the two specified wavelengths, and the chromatic aberration (e.g., OPD) of an achromat at wavelengths outside the wavelength range bounded by the two specified wavelengths is substantial. Disclosure of an achromatic objective, per se, does not teach, disclose, or suggest, a color correction over a spectral range from approximately ultraviolet to approximately infrared, as required by independent claims 1 and 5.

Second, in a UV achromatic objective, as disclosed in Zapien, the two specified wavelengths are selected from the UV spectrum, so that, at best, color correction occurs

only in a UV region. Disclosure of a UV achromatic objective, per se, does not teach, disclose, or suggest color correction over a spectral range from approximately ultraviolet to approximately infrared, as required by independent claims 1 and 5.

Third, the Office Action contends that "the range could be from 1.5 to 6.5 eV... that would include a spectral range from approximately ultraviolet to approximately infrared." Applicants agree that Zapien discloses an ellipsometer capable of spanning the range from 1.5 to 6.5 eV. However, the mere fact that an ellipsometer is capable of spanning a particular range says nothing about whether the objectives of the ellipsometer are color-corrected within that range. In fact, the present application admits that "light of various wavelengths is used" in spectral ellipsometers. (Page 2, line 1.) An object of the present invention is to provide a very small measurement spot (e.g., smaller than 100 μm) over a wide wavelength range (e.g., from UV to infrared), and this object is achieved by color correcting the illuminating optical system over a spectral range from approximately ultraviolet to approximately infrared. The fact that Zapien discloses only a UV achromatic objective is further evidence that Zapien's disclosure of an ellipsometer capable of spanning the range from 1.5 to 6.5 eV does not disclose color correction over that range.

Hecht does not teach, disclose, or suggest color correction over a spectral range from approximately ultraviolet to approximately infrared, and thus fails to cure the deficiencies of Zapien. Therefore, independent claims 1 and 5, and all claims dependent therefrom, are believed to be patentable over the cited references. Withdrawal of the rejections is respectfully requested.

Conclusion

Applicants believe that the present application is in condition for allowance, and favorable reconsideration is requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date 4/15/04

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